Control #: D4-300-080

FACILITY STATUS CHANGE FORM

1219501

Date Submitted:	Area:	Control #:
February 7, 2013	300 Area	D4-300-080
Originator:	**Facility ID:**	
Chris Strand	329	
Phone:	**Action Memorandum:**	
554-2720	Action Memorandum #3	

This form documents agreement among the parties listed below on the status of the facility D&D operations and the disposition of underlying soil in accordance with the applicable regulatory decision documents.

Section 1: Facility Status

☐ All D4 operations required by action memo complete.

☒ D4 operations required by action memo partially complete, remaining operations deferred.

Description of Completed Activities and Current Conditions:

Deactivation: Utility isolations were performed on the facility prior to beginning facility decontamination.

The following hazardous materials were removed prior to facility demolition: batteries, Freon, oil, lights, light ballasts, lead, HEPA filters, radiologically contaminated piping, asbestos containing materials (ACM) and miscellaneous construction materials. ACM was removed by asbestos competent workers. Hazardous material removal and waste disposition was performed in accordance with *Removal Action Work Plan for 300 Area Facilities*, DOE/RL-2004-77, Revision 2 (RAWP).

Demolition: Above-grade demolition of the the 329 Building was completed in January 2013. The at-grade slab, partial basement, and neutron monitoring and ion exchange pits remain in place. Removal of these portions of the facility are interfered with by long-term retained utilities that support ongoing operation of the adjacent 325 Building. The building debris from above-grade demolition was removed and disposed of at ERDF. The demolition was performed under Radiological and Industrial Hygiene controls.

Description of Deferral (as applicable):

The 329 at-grade slab, partial basement, and neutron monitoring and ion exchange pits remain in place. Removal of these portions of the facility are interfered with by long-term retained utilities that support ongoing operation of the adjacent 325 Building. EPA concurrence to defer below-grade demolition is included as Attachment 4.

Section 2: Underlying Soil Status

☐ No waste site(s) present. No additional actions anticipated.

☒ Documented waste site(s) present. Cleanup and closeout to be addressed under Record of Decision.

☐ Potential waste site discovered during D4 operations. Waste site identification number <to be> assigned.

Cleanup and closeout to be addressed under Record of Decision.

Description of Current/As-Left Conditions:

The 329 at-grade slab and grout-filled basement and pits remain. IH and radiological down-posting of the area is complete. A final GPERS survey of the slab was performed, no postings remain.

Identification of Documented Waste Site(s) or Nature of Potential Waste Site Discovery (as applicable):

300-15 process sewer segments remain.
300-214 retention process sewer segments remain.
300-RLWS segments remain.
300-RRLWS segments remain.

Section 3: List of Attachments

Facility information (building history, characterization and identification of documented waste sites).
Project photographs.

FACILITY STATUS CHANGE FORM

3. GPERS Survey of the 329 Slab.
4. Civil Survey of the 329 Slab.
5. EPA Concurrence for the 329 End-State.

	2/7/2013
DOE-RL	Date
Larry Gadbois	Feb 7 2013
Lead Regulator ☒ EPA ☐ Ecology	Date

DISTRIBUTION:

EPA: Larry Gadbois, B1-46
Ecology: Rick Bond, H0-57
DOE: Rudy Guercia, A3-04
Document Control, H0-30
Administrative Record, H6-08 (300-FF-2)
SIS Coordinator: Ben Cowin, H4-22
D4 EPL: Chris Strand, L4-45
Sample Design/Cleanup Verification: Theresa Howell, H4-22
FR Engineering: Eric Ison, L6-06
FR EPL: Chris Strand, L4-45

Attachment 1: Facility Information

Building History:

The 329 Building, originally known as the Biophysics Laboratory, began operations in 1953 to support the Hanford Works environmental monitoring and bioassay programs. It was a bolted steel frame, two-story, structure with exterior walls mostly of fluted steel insulated panels and floors of reinforced concrete. The building included a partial basement that contained support utilities and effluent piping that exited in this location.

PNNL assumed operating responsibility for the facility in 1987. Activities included radionuclide, nuclear, and chemical measurements; development of analytical radiation detection and radiation sampling instruments; improvements to neutron detector performance; and use of plasma and organic mass spectrometers. The 329 Building transitioned from PNNL to WCH in February 2011, for D4.

Building Characterization:

Table 1 summarizes the industrial hygiene, radiological control, and asbestos samples collected on facility components that were demolished.

Table 1. Summary of Characterization Surveys at 329.

Type	Date	Documented In	Results Summary
Asbestos	March 20, 2012	CNN # 165739	ACM was identified in floor tile, floor sheeting and mastic, CAB, TSI pipe insulation, window/door putty, mastic in metal and in Hauserman panels. PACM included 9"x 9" floor tiles, gaskets in fire system & vent ducts, Hauserman panels & door and fire doors
IH Surveys and Beryllium Characterization	February 24, 2011 September 1, 2011 July 29, 2011 August 30, 2011 July 29, 2011 September 19, 2011 October 27, 2011	CNN # 154537 CNN # 161043 CNN # 161045 CNN # 161046 CNN # 161047 CNN # 161784 CCN # 162507	Be was identified and demolition work was performed under Beryllium Work Permit.

Table 1. Summary of Characterization Surveys at 329 Continued.

Radiological Surveys	May 3, 2011 May 14, 2011 May 16, 2011 May 26, 2011 June 2, 2011 June 21, 2011 June 22, 2011 June 28, 2011 June 29, 2011 June 30, 2011 July5,2011 July 6, 2011 July 8, 2011 July 19, 2011 July 26, 2011 July 18, 2011 July 18, 2011 July 25, 2011 July 27, 2011 July 26, 2011 July 29, 2011 July 29, 2011 August 24, 2011 August 25, 2011 August 26, 2011 August 26, 2011	RSR-300PS-11-1996 RSR-300PS-11-2215 RSR-300PS-11-2222 RSR-300PS-11-2503 RSR-300PS-11-2553 RSR-300PS-11-2864 RSR-300PS-11-2887 RSR-300PS-11-2962 RSR-300PS-11-2996 RSR-300PS-11-3000 RSR-300PS-11-3043 RSR-300PS-11-3073 RSR-300PS-11-3101 RSR-300PS-11-3314 RSR-300PS-11-3472 RSR-300PS-11-3290 RSR-300PS-11-3327 RSR-300PS-11-3446 RSR-300PS-11-3483 RSR-300PS-11-3461 RSR-300PS-11-3547 RSR-300PS-11-3538 RSR-300PS-11-3967 RSR-300PS-11-3978 RSR-300PS-11-4000 RSR-300PS-11-4007	Field surveys and sampling were performed and identified High Contamination Areas, Contamination Areas, and Radiation Areas. Highly contaminated items (e.g, fume hoods) were removed prior to demolition.

Associated WIDS sites:

300-15 process sewer segments remain.
300-214 retention process sewer segments remain.
300-RLWS segments remain.
300-RRWLS segments remain.

Anomalies Discovered During Demolition.

No anomalies were observed during the demolition of the 329 Building. GPERS surveys of the remaining slab surface identified no contamination.

Attachment 2: 329 Project Photographs

Photograph 1: Looking north at the 329 Chemical Sciences Laboratory in July 2012.

Photograph 2: 329 exterior looking northeast on March 22, 2011.

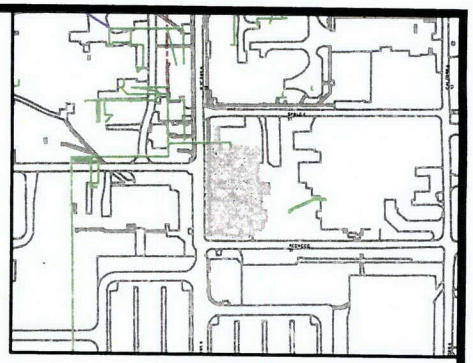
Photograph 3: 329 slab following above-grade demolition, looking southeast on January 28, 2013.

Photograph 4: 329 slab following final grading and down-posting, looking southeast on February 6, 2013.

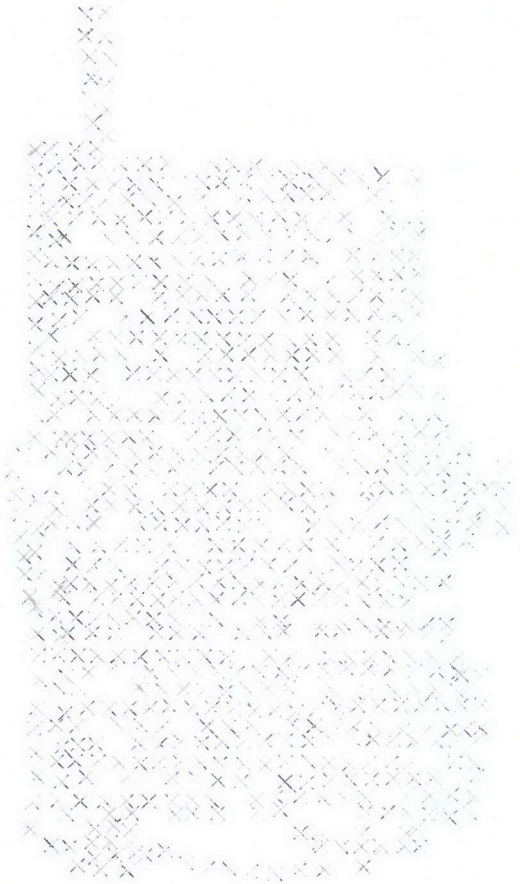
Attachment 3: GPERS Survey of the 329 Slab.

N

Bkg Location
190 meters NE
353 cpm



Site View



Copy

Legend

NET CPM

- <529
- 529 - 5000
- 5000 - 10000
- 10000 - 25000
- 25000

Summary Statistics

Coverage File: D4_028,A
Number of Data Pnts: 777
Type of Survey: beta
Max GCPM: 854
Avg Bkg CPM: 353
Survey Date: 1/28/2013
Area Surveyed: 3,060 m^2
Project File: ESRFRM130013B
Pdf File: ESRFRM130013BC

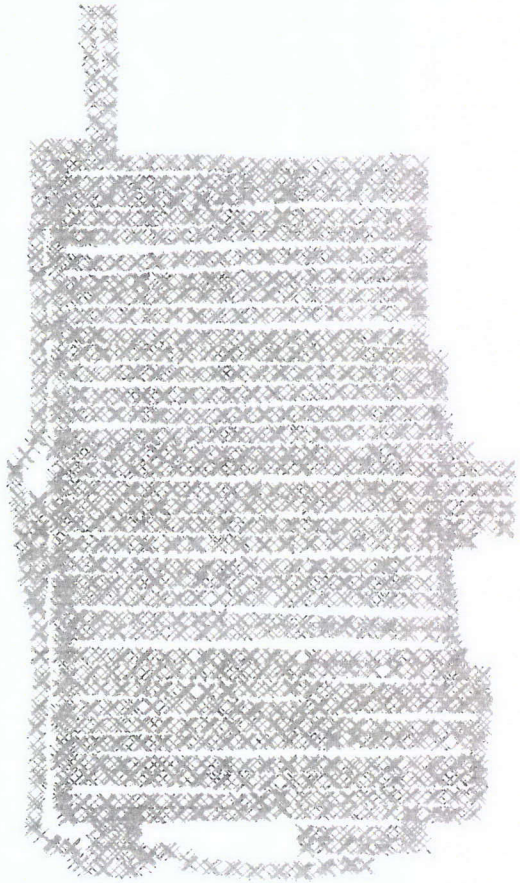
300 D4
329 Slab Area
GPERS Radiological Survey
Beta Track Map

0 5 10 15 20 25
Meters

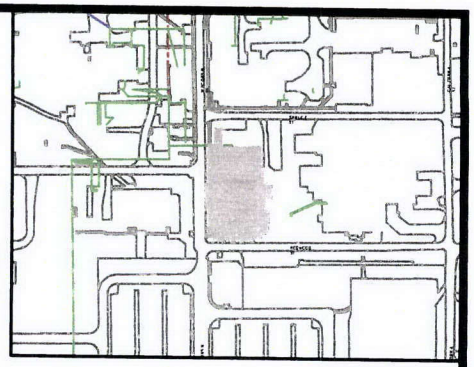
EBERLINE SERVICES

Survey Map Prepared By Bruce Coomer, ESI

N



Bkg Location
190 meters NE
1660 cpm



Site View

Copy

Legend

NET CPM

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- 2490 - 5000
- 5000 - 10000
- 10000 - 25000
- 25000

Summary Statistics

Coverage File: D4_028,A
Number of Data Pnts: 10259
Type of Survey: gamma
Max GCPM: 3227
Avg Bkg CPM: 1660
Survey Date: 1/28/2013
Area Surveyed: 3,060 m^2
Project File: ESRFRM130011G
Pdf File: ESRFRM130011GC

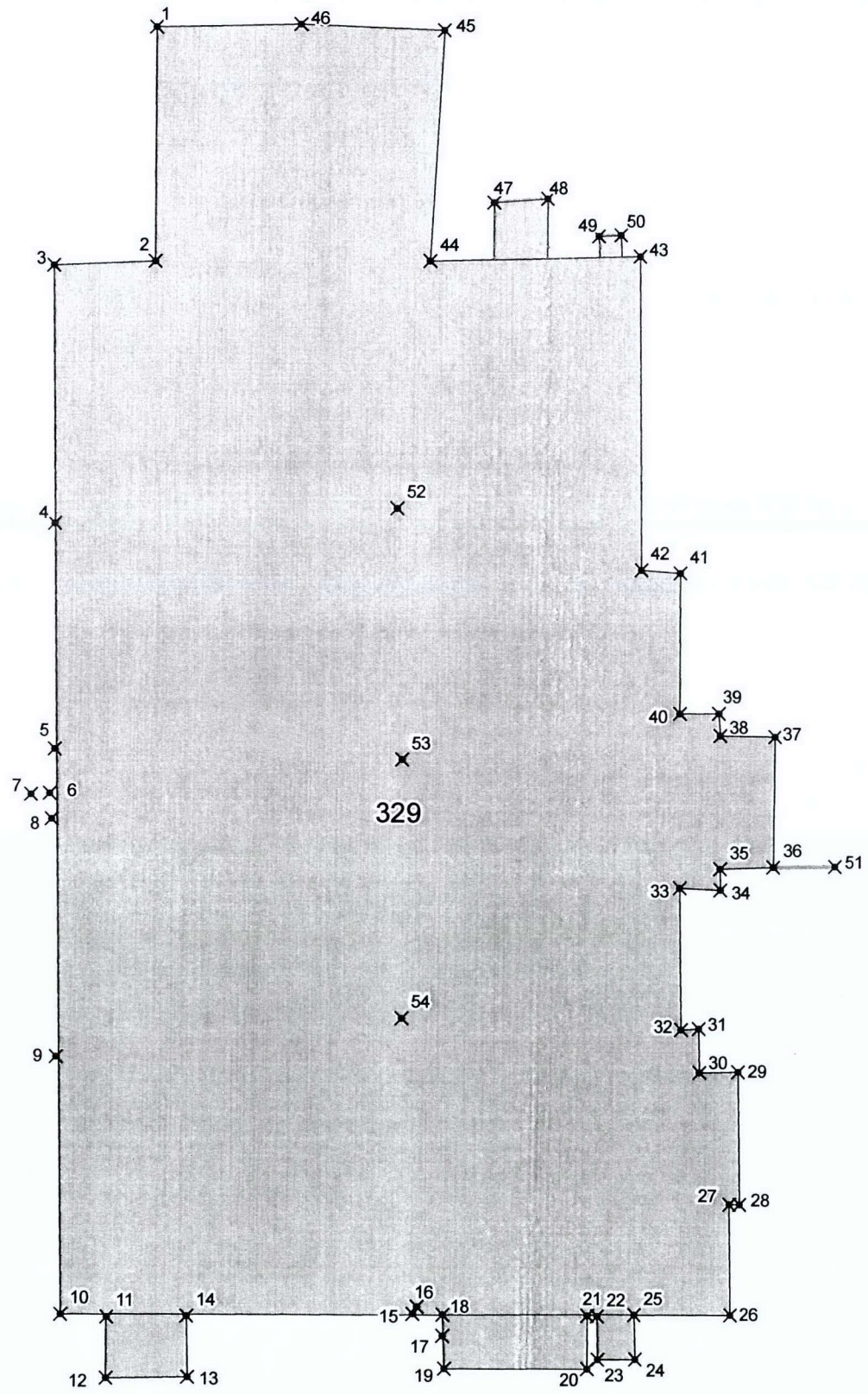
300 D4
329 Slab Area
GPERS Radiological Survey
Gamma Track Map

0 5 10 15 20 25
Meters

EBERLINE SERVICES

Survey Map Prepared By Bruce Coomer, ESI

Attachment 4: Civil Survey of the 329 Slab.



Post Demo Excavation for 329 Building

GPS Point Locations:

- See GPS Survey Report for Point Details
- Top of Foundation
- Demolished Concrete

N

0 5 10 20 Meters

WCH: \\Hgis01\gishome\maaye\ArcMap\300A\postdemo329.mxd Date: 2/4/2013

Attachment 5: EPA Concurence for 329 End-State.

^WCH Document Control

165035

From: Strand, Christopher P
Sent: Tuesday, April 17, 2012 10:18 AM
To: ^WCH Document Control
Subject: FW: 329 Building End-State Proposal
Attachments: 329 Proposed Slab_Legend.jpg; 329 End State.doc

Please chron and enter into project record as "EPA Concurrence with 329 Building End-State Proposal".

Thanks,

Chris
554-2720

From: Larry Gadbois [mailto:Gadbois.Larry@epamail.epa.gov]
Sent: Friday, April 13, 2012 10:20 AM
To: Guercia, Rudolph F
Cc: Strand, Christopher P
Subject: RE: 329 Building End-State Proposal

This version is OK with EPA.
--Larry--

"Strand, Christopher P" ---04/12/2012 09:21:32 AM---Larry, Rudy,

From: "Strand, Christopher P" <cpstrand@wch-rcc.com>
To: Larry Gadbois/R10/USEPA/US@EPA, "Guercia, Rudolph F" <rudolph.guercia@rl.doe.gov>
Date: 04/12/2012 09:21 AM
Subject: RE: 329 Building End-State Proposal

Larry, Rudy,

I believe questions have been answered and the proposal has been adjusted for clarification on a couple of points. Again, if any issues arise that could cause deviation from this proposal, EPA and DOE will be consulted accordingly.

Please take a another look at the attached, any other comments or questions are welcome. It is important that you both are comfortable with this approach. If satisfied, please indicate as such and we will work towards this goal.

Much appreciated,

Chris
554-2720

From: Strand, Christopher P
Sent: Thursday, April 12, 2012 5:58 AM

To: 'Larry Gadbois'; Guercia, Rudolph F
Subject: RE: 329 Building End-State Proposal

Gentlemen,

I also received comments from DOE and will revise the end-state proposal to address those and EPA questions below. I will resubmit accordingly.

Thank you,

Chris
554-2720

From: Strand, Christopher P
Sent: Wednesday, April 11, 2012 12:18 PM
To: 'Larry Gadbois'; Guercia, Rudolph F
Subject: RE: 329 Building End-State Proposal

Larry,

On DOE's behalf, I can answer your questions.

1. No appreciable radiological inventory within the building proper will be left behind. All basement areas to be left are presently not radiologically controlled.
2. The hot cells are in the 326 Building, no hot cells exist in the 329 Building. Contaminated areas primarily consist of laboratory hoods and associated ducting located on the first floor and up. All if these structure will be removed during demolition.
3. The neutron and ion exchange pits are already empty and have been characterized. So yes, only the civil structure will remain.
4. The process sewer will be isolated (plugged) at the floor slab, there are no plans to stabilize. Characterization water from the process sewer shows metals present below regulated levels. Radiological contamination is very low with all positive results at pCi/g levels. RLWS and RRLWS stabilization will be performed as part of the over 300 Area piping work scope.
5. The mechanical room does contain equipment with oils & greases. All equipment and hazardous materials will be removed,only the basement civil structure will remain. No HEPA filters are located in the basement either.

Hope this response is sufficient for your consideration.

Thanks,

Chris
554-2720

From: Larry Gadbois [mailto:Gadbois.Larry@epamail.epa.gov]
Sent: Wednesday, April 11, 2012 8:55 AM
To: Guercia, Rudolph F
Cc: Strand, Christopher P
Subject: Re: 329 Building End-State Proposal

Rudy:
Several questions I can't find answers to in the writeup:
1) Will any significant radiological content be left behind? Note it mentions all hazardous material would be removed (does this just mean asbestos, mercury switches, lead shilding etc. or does include radiological material?]

2) We've talked about the hot cell. I don't see it mentioned as being left behind. That is good. I believe this means the hot cell will be removed, correct?
3) Re the neutron multiplier pit and ion exchange pit, are they to be emptied so all that is left is the concrete walls and floors and maybe any built in steel beams, etc?
4) Will the process sewer beneath the floor slap be fogged with fixative before being sealed up?
5) Does the basement mechanical room have anything like PCB oils, HEPA filters, or other discrete possibly significant hazardous/radiological content?
--Larry--

"Strand, Christopher P" ---04/09/2012 02:23:46 PM---Larry, Rudy, Attached for EPA and DOE review and/or concurrence is a proposed

From: "Strand, Christopher P" <cpstrand@wch-rcc.com>
To: Larry Gadbois/R10/USEPA/US@EPA, "Guercia, Rudolph F" <rudolph.guercia@rl.doe.gov>
Date: 04/09/2012 02:23 PM
Subject: 329 Building End-State Proposal

Larry, Rudy,

Attached for EPA and DOE review and/or concurrence is a proposed end-state for the 329 Building. As previously discussed, continued operation of the adjacent 325 Building, including associated utility interferences, precludes removal 329 Building slab and basement. Also attached is a floor plan that provides a visual representation of the portion of the building to remain.

Several items keep in mind during your evaluation:

1. The basement area is small and uncontaminated.
2. The basement area and two pits will be filled to eliminate void space issues and preclude accumulation of storm water.

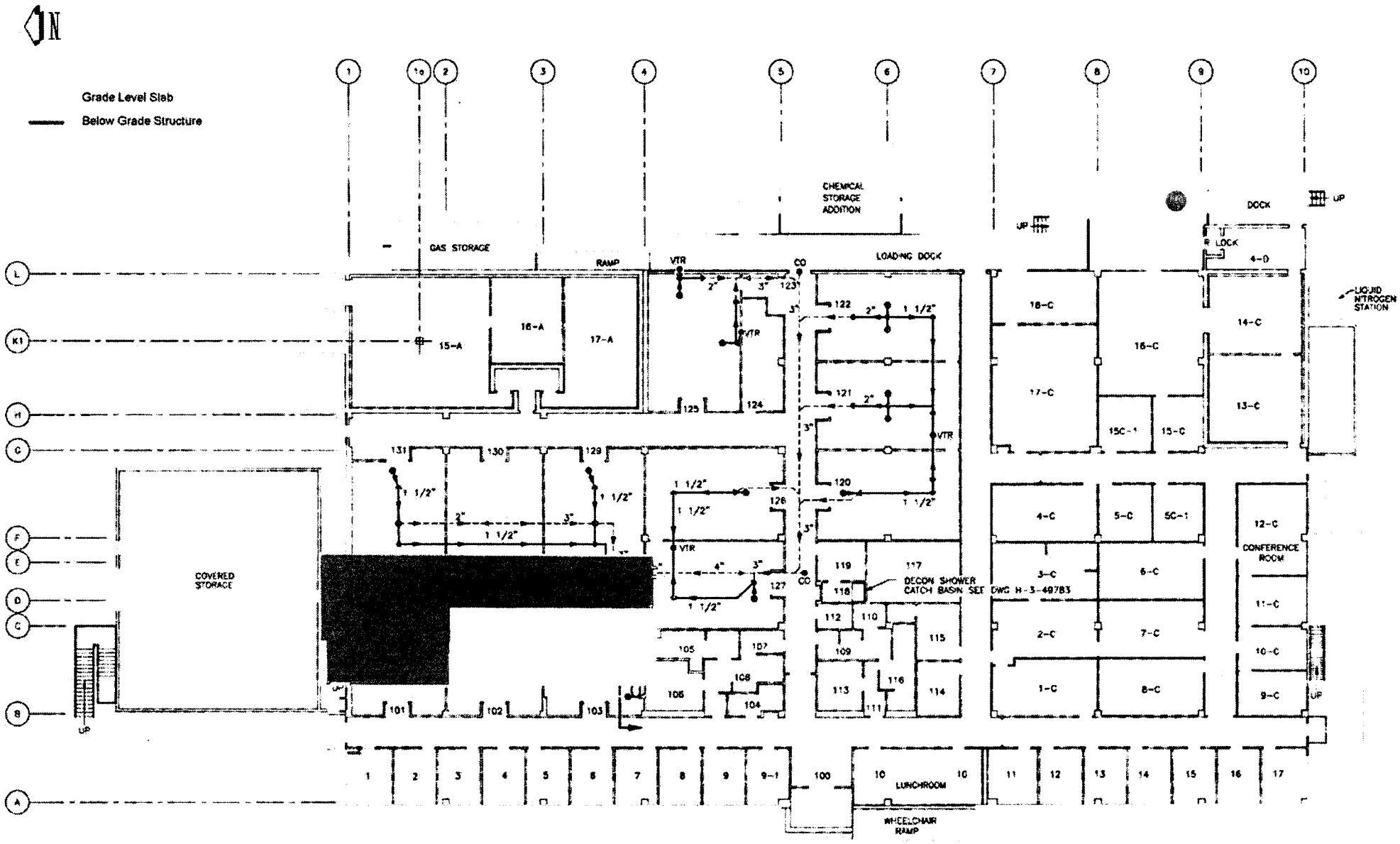
The proposal contains a caveat that any changes to the plan will be communicated to your respective offices. And lastly, both DOE and EPA have final approval authority via signature on the Facility Status Change Form.

If you have any questions, or comments on the proposal, do not hesitate to respond.

Thanks,

Chris
554-2720

<<329 Proposed Slab_Legend.jpg>> <<329 End State.doc>> *(See attached file: 329 Proposed Slab_Legend.jpg)(See attached file: 329 End State.doc)* [attachment "329 End State.doc" deleted by Larry Gadbois/R10/USEPA/US] [attachment "329 Proposed Slab_Legend.jpg" deleted by Larry Gadbois/R10/USEPA/US]


N
Grade Level Slab
Below Grade Structure
CHEMICAL STORAGE ADDITION
GAS STORAGE
RAMP
VTR
CO
LOADING DOCK
DOCK
UP
R LOCK
LIQUID NITROGEN STATION
15-A
16-A
17-A
COVERED STORAGE
DECON SHOWER CATCH BASIN SEE DWG H-3-49783
LUNCHROOM
WHEELCHAIR RAMP
CONFERENCE ROOM

END-STATE PROPOSAL FOR THE 329 BUILDING

INTRODUCTION

This proposal has been developed to document the end-state of the 329 building following demolition. The proposal also serves as basis to gain concurrence from the U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operation for "as left" conditions to be documented on a Facility Status Change Form (FSCF) in accordance with the Removal *Action Work Plan for 300 Area Facilities*, DOE/RL-2004-77, Rev. 2.

As established in WCH- 487, *"Hanford 300 Area Retained facilities waste Sites Evaluation Study"*, removal of at-grade and below-grade 329 Building structures are interfered with by long-term retention of the 325 Laboratory and associated utilities.

329 BUILDING DESCRIPTION

The 329 building is located in the central portion of the 300 Area and is bounded by Wisconsin St. on the west, Redwood St. on the south, and Spruce St. on the north.

The building measures 217'-6" in the north/south direction and 121'- 7" in the east/west direction and consists of a bolted steel framework structure with exterior walls of fluted steel and insulated panels. The two story facility has only a partial basement. The addition of the HEPA filter room on the north end and the Neutron Multiplier Facility in the southeast corner brought the total square footage to approximately 39,420.

The first floor slab (5 inches thick) is located at elevation 100'-0". The base of concrete support footings are located at various elevations from 89'-6" to 95'-6" feet. The first floor slab (with the exception of the basement area) lies entirely on compacted fill. Supporting steel columns extend through the first floor slab and terminate at different elevations and provide load bearing capacity for upper levels of the building. Piping systems located below the first floor slab are encased in trenches with the top of the trenches level with the slab.

The building has a small basement that consists of a mechanical room and service tunnel that contain different piping systems, drains and miscellaneous equipment. The bottom slab of basement areas is at approximate elevation 90'-11". This total area is relatively small, covering approximately 1340 square feet. The building was serviced by Retired Radioactive Liquid Waste (RRLWS), Retired Radioactive Liquid Waste (RLWS), Retention Process Sewer (RPS), and Process Sewer (PS) piping systems. These piping systems exit the basement on the north side (Spruce St).

329 BUILDING HISTORY

The 329 Biophysics Laboratory was built in 1952 to 1953 to support the early Hanford environmental and bioassay programs. The original mission of the 329 Building was to house the preparation and counting of radioactivity levels in samples taken of the air, vegetation, soil, wildlife, river, well water, and various types of bioassay samples. Other building functions included the development of new sample counting procedures and method, the invention and improvement of radiation monitoring instruments, and the application of industrial hygiene techniques from other industries to Hanford's health physics needs.

329 BUILDING INTERIM END-STATE

The above grade portion of the building will be demolished using standard industry techniques. In addition, all the below grade (under the first floor slab) utilities, piping systems, etc. will be isolated around the entire building perimeter just outside of the exterior below grade walls. The sanitary sewer and processes sewers will be isolated and plugged where they exit the building under the first floor slab. All ancillary buildings, the stack, and miscellaneous peripheral equipment, etc. are to be removed from around the building as part of above-grade demolition. The neutron monitoring pit and ion exchange pit are considered below grade structures and contain no equipment or residual process materials. Prior to demolition, all hazardous materials will be removed from the entire building. All hazardous materials, piping, and equipment will be removed from the basement. Piping exit points from the building will be plugged, air-gapped, or otherwise isolated to minimize migration of any residual contamination. The building slab and foundation proposed to be left in place contains no appreciable radionuclide inventory and is not currently posted for radiological controls.

This interim configuration is necessary to prevent damage to existing and active utilities that surround the building. These utilities include sanitary water, fire protection water, electrical, sanitary sewer, natural gas, and retention process sewer lines.

Final configuration of the building will consist of (reference first floor and basement plan):

1. At grade slab (all penetrations plugged)
2. Below grade structures
   - Basement mechanical room
   - Service tunnel
   - Neutron multiplier Pit
   - Ion exchange pit
3. Under-slab process sewer piping (isolated and plugged)
4. Storm drain & lift station (exterior, southeast corner, to remain active supporting 325).

The below-grade structures will be filled with an inert material (i.e., controlled density fill or approved pit borrow) to prevent subsidence and the accumulation of storm water. A final of cap of barrow material and grading around exterior of the remaining structure will be evaluated prior to site completion. This evaluation will include installation of any necessary safety barriers and postings.

Any changes to the approach outlined above will be discussed with DOE and EPA prior to submitting closure documentation contained the 329 Building FSCF.